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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,094

07/14/2003

Henry Huang

Huang I

9271

7590

09/28/2006

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P.O. Box 556  
Springtown, PA 18081

EXAMINER

PETKOVSEK, DANIEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/621,094	Applicant(s) HUANG, HENRY	
	Examiner Daniel J. Petkovsek	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on new drawings filed April 5, 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on April 5, 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

This office action is in response to the new drawings filed on April 5, 2006, and with respect to the claims amended, most recently on February 22, 2006. In accordance with the most recent amendment, claims 1-3 and 6 have been amended, while claim 7 has been canceled. The amendments to the specification have been acknowledged. Claims 1-6 are pending.

#### *Drawings*

1. The drawings were received on April 5, 2006. These drawings are acknowledged.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Dawson-Elli U.S.P. No. 6,243,527 B1.

Dawson-Elli U.S.P. No. 6,243,527 B1 teaches (ABS, Figs. 4 and 5, column 4, line 43 through column 5, line 49) a passively temperature controlled optical grating device 500 comprising: a support frame formed of a material exhibiting a relatively low CTE, said support frame including a floor bottom surface (lower bottom part indicated near reference number 502), a first fixed sidewall 506 and a second fixed sidewall 503; a lever arm 504 formed of a relatively low CTE material fixed at a first end to a predetermined pivot point along the support frame

bottom surface, a second, remaining end (near frit attachment 512) of said lever arm 504 free to rotate about said pivot point (at connection of 503 and 504, must pivot or twist); an optical fiber grating 511 attached between said first fixed sidewall 506 and said second remaining end of said lever arm 504; and an expansion element 508 formed of a material exhibiting a relatively high CTE, said expansion element coupled between the second fixed sidewall 502/503 and said lever arm 504, wherein changes in the dimensions of said high CTE expansion element 508 as a function of temperature rotate said lever arm through a predetermined angle (i.e. see column 5, lines 38-49: bending/rotation of a "pivot") about said pivot point (at joint) to modify the strain applied to said optical fiber grating 511, which will inherently change wavelength of the optical grating device, which clearly, fully meets Applicant's *claimed* limitations.

Regarding claim 6, the high CTE element 508 is an "arm", which meets Applicant's *claimed* limitations.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson-Elli U.S.P. No. 6,243,527 B1.

Dawson-Elli U.S.P. No. 6,243,527 B1 teaches (ABS, Figs. 4 and 5, column 4, line 43 through column 5, line 49) a passively temperature controlled optical grating device 500 comprising: a support frame formed of a material exhibiting a relatively low CTE, said support

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frame including a floor bottom surface (lower bottom part indicated near reference number 502), a first fixed sidewall 506 and a second fixed sidewall 503; a lever arm 504 formed of a relatively low CTE material fixed at a first end to a predetermined pivot point along the support frame bottom surface, a second, remaining end (near frit attachment 512) of said lever arm 504 free to rotate about said pivot point (at connection of 503 and 504, must pivot or twist); an optical fiber grating 511 attached between said first fixed sidewall 506 and said second remaining end of said lever arm 504; and an expansion element 508 formed of a material exhibiting a relatively high CTE, said expansion element coupled between the second fixed sidewall 502/503 and said lever arm 504, wherein changes in the dimensions of said high CTE expansion element 508 as a function of temperature rotate said lever arm through a predetermined angle (i.e. see column 5, lines 38-49: bending/rotation of a "pivot") about said pivot point (at joint) to modify the strain applied to said optical fiber grating 511, which will inherently change wavelength of the optical grating device.

Dawson-Elli '527 does not explicitly teach the specific materials for the low CTE frame (claims 2 and 3 – Kovar, Invar) or the high CTE expansion element (claims 4 and 5 – aluminum alloy, brass). However, since these materials are well-known in the art for having durable/useful properties and having either low or high thermal coefficients of expansion, a person having ordinary skill in the art at the time the invention was made would have recognized the use of these well known materials for this purpose. A person having ordinary skill in the art would recognize the use of the specific claimed elements for the purpose of durability and functionality of the optical system.

*Response to Arguments*

6. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new grounds of rejection. Claims 1-6 are finally rejected under both 35 U.S.C. 102(b) and 35 U.S.C. 103(a) to Dawson-Elli '527.

*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of thermal compensated grating devices: PTO-892 form references A-C.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel Petkovsek  
September 22, 2006



SUNG PAK  
PRIMARY EXAMINER